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Today's Topics:

MAJOR SOLAR FLARE ALERT - HIGH IMPACT EXPECTED FOR 16 MARCH

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We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Wed, 13 Mar 1991 16:18:32 -0500  
From: oler@HG.ULeTh.CA (CARY OLER)  
Subject: MAJOR SOLAR FLARE ALERT - HIGH IMPACT EXPECTED FOR 16 MARCH  
To: info-hams@ucsd.edu

-- MAJOR SOLAR FLARE ALERT --

MARCH 13, 1991

Alert #2

Flare Event Summary

\*\* POTENTIALLY HIGH TERRESTRIAL IMPACTS EXPECTED \*\*

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MAJOR ENERGETIC EVENT SUMMARY

Two additional major solar flares have occurred over the past 24 hours. The first major event was rated a class X1.3/2B and seems to have been associated with a Type IV sweep. Several Type IV sweeps have been observed recently. The event began at 08:00 UT, peaked at 08:08 UT and ended at 08:13 UT. The flare was located within Region 6545 near S10E45 (unofficial). The flare was associated with a strong 1300 s.f.u. Tenflare at 08:02 UT.

The second major flare erupted at 15:42 UT, peaked at 15:48 UT and ended at 16:02 UT. This event was rated a class X3.9/1N. A strong Tenflare of 3600 s.f.u. was also observed with this flare.

Satellite protons increased to near event thresholds recently. The peak proton count reached 9 p.f.u. (10 is the event level). It has since declined and is presently holding at near 4 p.f.u..

Region 6545 is a potent region containing large sunspots in close proximity to one another. Magnetic fields are high and gradients are strong. This region will continue to produce major solar flares of class X or M intensities. Protons could easily surpass event thresholds if flaring continues.

Region 6538 continues to remain fairly dormant in flare output, but contains all of the ingredients necessary to begin major flaring again. It is expected to begin to produce at least M-class flares anytime now.

POTENTIAL TERRESTRIAL IMPACT FORECAST

A POTENTIALLY HIGH TERRESTRIAL IMPACT IS BEING FORECASTED FOR 15, 16 AND POSSIBLY 17 MARCH!

A MAJOR GEOMAGNETIC AND AURORAL STORM is possible on 15 and/or 16 March. Data obtained from Pioneer Venus show that the solar wind velocity has increased dramatically to values near 970 km/s with a strongly directed southward magnetic component. It is possible that the earth could be hit

with some of the material streaming by this satellite. Current predictions estimate that the geomagnetic storming could push the A-index to levels near 50 on 16 March. Middle latitude magnetic K-indices are expected to be sustained near 5 and 6 with possible brief periods near 7 (if activity is more intense than expected). High latitude magnetic activity could surpass A-indices of 100 with associated K-index values between 7 and 9 (it should be noted that a K-index of 9 is the top of the scale). Magnetic perturbations over high latitudes could approach 1,500 to 2,000 gammas. Middle latitudes could see fluctuations between 100 and 250 gammas (for mid to southerly middle latitudes). Northerly middle latitudes could see fluctuations ranging from 200 to 1000 gammas.

A MAJOR geomagnetic storm is possible. Storming is expected to peak on 16 March. A sudden storm commencement associated with the arrival of the interplanetary shockwave is expected sometime on 15 March. It is difficult to determine when this shock might hit, but preliminary estimates suggest that the shock could arrive near 12:00 UT on 15 March. Minor to major geomagnetic storming could follow shortly thereafter.

A POTENTIAL LOW LATITUDE AURORAL ACTIVITY WARNING is being issued for 16 March. Auroral activity could become visible at southerly middle and some low latitude regions if storming reaches or exceeds predicted levels. High latitude and northerly middle latitudes could experience auroral storming with possible high auroral activity.

Significant VHF auroral backscatter will be possible late on 15 and on 16 March. HF conditions are expected to be quite disturbed on 16 March. Significant fading, flutter, noise and absorption are possible. If storming occurs, MUF's will decrease and LUF's will increase notably. Updates and/or modifications to this forecast will be posted when available.

Major flaring is expected to continue. Proton and/or PCA activity could occur anytime. Watch for possible future warnings and/or alerts.

\*\* End of Alert \*\*

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End of Info-Hams Digest

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